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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/848,831	05/19/2004	James F. Bredt	ZCO-100	4783

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EXAMINER
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AHMED, SHEEBA

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



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## DETAILED ACTION

### *Preliminary Amendment*

1. The Preliminary Amendment submitted on September 15, 2004 has been entered in the above identified application. Claims 26 - 39, 41 - 59, 61 - 67, 69 - 75, 77, 79, 81, and 84 -87 have been canceled. **Claims 1 - 25, 40, 60, 68, 76, 78, 80, 82, and 83 are now pending and under consideration.**

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-25, 40, 60, 76, 78, 80, 82, and 83 are rejected under 35 U.S.C. 102(b) as being anticipated by Cima et al. (US 5,387,380).

Cima et al. disclose the use of 3D printing techniques to manufacture prototype parts (Column 1, lines 14-16). A powdered material such as powdered ceramic, metal or plastic is deposited in sequential layers one on top of the other. After each layer is deposited, a binder material is provided on top to form the part in question (Column 3, lines 1-20). While the layers become hardened as each of the layers is laid down, the part may be heated or cured to further promote binding of the powdered particles (Column 4, lines 44-55). The powder may be deposited in dry or wet form (Column 5, lines 18-23). Particle sizes may range in the 5-20 micron size. Colloidal dispersion of

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particles can be obtained in a liquid vehicle using chemical dispersants (Column 8, lines 66-68). The binder material may be such that the bonded particles have a high binding strength as each layer is deposited so that when all the layers have been bonded, the component formed thereby is ready for use without further processing (Column 9, lines 6-32). Organic binders can be used and examples include cellulosic binders and butyral resins (Column 10, lines 31-36). Binder particles entrained in liquid can be used (Column 11, lines 50-52). Many possible combination of powder and binder materials can be used. Examples include ceramic powders in either organic or inorganic binder and plastic powder with a solvent binder or a plastic binder such as a epoxy plastic material (Column 12, lines 11-21). Volatile liquids are advantageous in linking and strengthening a powder layer since they reduce the accumulation of liquid in each layer. For examples, methanol with a small amount of octanol distributed in a thin layer can be used. Other examples include salt dissolved in water (Column 13, lines 23-65). All limitations of claims 1-25, 40, 60, 76, 78, 80, 82, and 83 are disclosed in the above reference.

3. Claims 1 - 25, 40, 60, 68, 76, 78, 80, 82, and 83 are rejected under 35 U.S.C. 102(b) as being anticipated by Bredt et al. (US 5,902,441).

Bredt et al. disclose an article made up of layers if a mixture of particles of an adhesive and a filler, the adhesive can be activated by a fluid containing a solvent and other processing aids which modify the working properties of the fluid and adhesive or which enhance the mechanical properties of the finished articles. The adhesive is

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directly mixed in with the filler and the method includes applying a layer of the mixture onto a flat surface, applying that fluid that activates the adhesive causing the particles to come together in a solid layer. Successive layers are applied and repeated until the required number of portions have been formed (Column 3, lines 35-67). Processing aids include humectants, flow rate enhancers, and dyes. The particle material may include a plurality of particles having a mean diameter of about 10-300 microns (Column 5, lines 1-36). The adhesive provides high bonding strength and preferred adhesives include water soluble compounds such as sugars, carbohydrates, protein. Specific examples include the polymers listed in Column 8. The filler is selected so that it is sparingly soluble in the fluid and examples include starches such as maltodextrin (Column 8, lines 15-36). The fluid that activates the adhesive includes a solvent that may be aqueous or non aqueous and examples include water, methyl alcohol, ethyl alcohol, acetone and acetic acid (Column 9, lines 28-41). All limitations of claims 1 - 25, 40, 60, 68, 76, 78, 80, 82, and 83 are disclosed in the above reference.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 76, 78, 80, and 82 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-26 of U.S. Patent No. 5,902,441. Although the conflicting claims are not identical, they are not patentably distinct from each other.

The claims of U. S. Patent No. 5,902,441 recite a method of forming an articles by applying a first film of particles that carry an activatable adhesive and a fluid that activates the adhesive in an amount sufficient to activate so that the particles in the film adhere to form a solid article and wherein subsequent films of particles are formed one on top of each other and wherein at least a portion of the particles is sparingly soluble in the fluid. U. S. Patent No. 5,902,441 further claims that the prickles have a mean diameter of 10-300 microns.

Accordingly, the method of forming an article using 3D printing as recited in claims 76, 78, 80, and 82 of the instant invention is obvious.

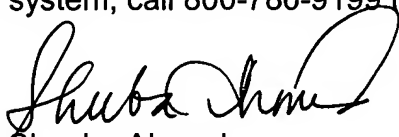
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***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 6am to 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571)272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sheeba Ahmed  
Art Unit 1773  
June 5, 2006